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ABSTRACT

This study describes the social interactions used by a group of 10 secondary-aged students with severe to profound mental retardation, using data gathered through the use of narrative recording procedures. The students' interactions were recorded during school arrival, lunch, and vocational training. Results are presented along three dimensions: task versus non-task interactions; direction of interactions; and purpose of interactions by condition. Results of teacher ratings and parent interviews are also presented. Students interacted 99% of the time with other adults. Students were involved primarily in task-related interactions in which the purpose was to direct, question, or provide information. Even at lunch, which is primarily a social time for nonhandicapped workers, interactions between teachers and students involved directions, questions, and information related to feeding or lunch programs. Though students were judged to be in the fluency and maintenance stages of learning their jobs, they received even more directions, praise, and criticism in vocational contexts than in the other contexts. Results are discussed with respect to the implications they have for facilitating the transition from school to work. (34 references) (JDD)

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# Social Interactions of Secondary-Aged Students with Severe Handicaps: Implications for Facilitating the Transition from School to Work

Janis Chadsey-Rusch

One of the quality indicators of state-of-the-art educational programs for students with severe handicaps is that the curriculum is functional and prepares them for future environments (Brown, Nietupski, & Hamre-Nietupski, 1976; Brown, Pumpian, Baumgart, Vandeventer, Ford, Nisbet, Schroeder, & Gruenewald, 1981; Snell, 1987). One important future environment for which all students should be prepared is the work setting. Indeed, this environment has been viewed as so important that recent legislation has allocated funds to study it (Rusch & Phelps, 1987). One reason the workplace has received increased attention is that many graduating youth with handicaps fail to secure employment (Hasazi, Gordon & Roe, 1985; Mithaug, Horichi, & Fanning, 1985; Wehman, Kregel, & Seyfarth, 1985).

When students with severe handicaps graduate from school, it is probable that many of them will need some type of ongoing support to acquire and maintain employment. The blueprint to accomplish this goal, called the supported employment model, has been described and implemented, and the results have been effective (Rusch, 1986; Vogelsberg, 1986; Wehman, 1986). Even with this model, however, many students remain unemployed or lose their jobs (Edgar & Levine, 1988). The work setting is a complex environment, and we really have limited knowledge about how to ensure that students with severe handicaps become an integral part of that environment.

Some of the skills that students will need to develop in high school to prepare them for work settings are vocational or job-task skills. Another important skill area is that of social skills. The workplace is a highly social environment; workers interact frequently about job- and non-job-related matters (Chadsey-Rusch & Gonzalez, 1988; Lignugaris/Kraft, Rule,

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Salzberg, & Stowitschek, 1986). In fact, social skills are considered so important in the workplace that workers often lose their jobs because they have displayed inappropriate social behaviors (e.g., Brickey, Campbell, & Browning, 1985; Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986).

Before we teach the social skills that are needed in employment settings, we must identify the skills that are valued and occur naturally. Employer surveys have provided information on valued social skills from a supervisor's perspective. For example, Rusch, Schutz, and Agran (1982) sent questionnaires to 120 potential employers from food service and janitorial/maid occupations in Illinois to solicit information about their expectations for entry into employment. Two social behaviors—verbally reciting full name on request and following one instruction provided at a time—were mentioned by every employer as being critical for competitive employment.

In another study, Salzberg, Agran, and Lignugaris/Kraft (1986) surveyed employers from five different jobs to obtain their opinions regarding social behaviors important for entry-level work. The results from this study indicated that social behaviors related to worker productivity (e.g., asking supervisors for assistance, following directions, responding to criticism, getting information before a job, offering to help co-workers) were rated higher in importance than general personal social behaviors (e.g., listening without interrupting, acknowledging, and expressing appreciation to co-workers).

Recently, several studies have been conducted where the social interaction patterns of both handicapped and nonhandicapped employees have been observed directly (Chadsey-Rusch & Gonzalez, 1988; Chadsey-Rusch, Gonzalez, Tines, & Johnson, 1989; Kirmeyer, 1988; Lignugaris/Kraft, Salzberg, Rule, & Stowitschek, 1988). Interestingly, even though these studies have been conducted in different states (e.g., Illinois, Utah, and Missouri) and across a variety of jobs (e.g., food service, printing, furniture refurbishing, police dispatching), there seems to be a fairly consistent pattern of social interactions that occur in work settings. For example, all of the authors cited above reported that task-related interactions occurred

more than non-task-related interactions and that workers interacted more with their co-workers than with their supervisors. Additionally, Lignugaris/Kraft et al. (1988) and Chadsey-Rusch and Gonzalez (1988) both found that the workers in their studies were involved in interactions around similar content areas: directions, questions, information, and teasing and joking.

Although more research is needed to identify the range of social interactions that occur in work settings, the behaviors identified so far provide a beginning description of the types of interactions that students with disabilities are likely to encounter when they make the transition from school to work. What is unknown, however, are the types of interactions that secondary-aged students with severe disabilities display. Knowledge of these interactions could provide baseline information on the types of social behaviors exhibited by students as they engage in their preparation for transition.

A variety of assessment approaches can be used to study social interactions (e.g., rating scales, role plays); however, it is only through direct observation in natural contexts that one is likely to see the social behaviors a person would typically emit. With many direct observational studies, a priori behavioral codes are generally used to measure behavior. However, with an established code, it is possible that important social behaviors might be missed (because they are not included on the code), and rich descriptions of contextual variables which influence social interactions may be difficult to capture. Consequently, this study sought to describe the social interactions used by a group of secondary-aged students with severe handicaps with the use of narrative recording procedures. The student's interactions were described when they arrived at school, during lunch, and when they were engaged in vocational training. The results are discussed with respect to the implications they have for facilitating the transition from school to work.

## Method

### Subjects

Seven male and three female students with severe handicaps participated in the study. Most of the students could walk independently; however, four of the students were nonambulatory. The average age of the students was 18.4 years (SD = 1.8). According to AAMD Classification, three students were labeled severely mentally retarded and seven students were labeled severely/profoundly mentally retarded. IQ scores were only reported for two participants (23 and 32).

Although all of the students responded to communication from others, few of the students actively initiated communication. Three of the students were involved in communication programs designed to enhance their verbal skills and the rest of the students were learning augmentative communication systems. Communication/social goals included such skills as answering yes/no and "wh" questions, initiating requests, using polite forms of conversation and correct forms of pronouns, and responding to greetings.

Nine of the students were involved in community-based vocational training experiences, and one student was receiving training on a job task at school. The students had been receiving training on the same job task for an average of 1.5 years (range of 9 months to 2 years 9 months). The classroom teacher judged five of the students to be in the maintenance phase of learning on their vocational tasks and the other five students to be in the fluency stage of learning.

### Setting

All of the students attended a public junior high school. However, the majority of the students were involved in community-based instruction, so only a few programs were implemented at the school. Most of the programs implemented at school were conducted in a segregated classroom that was team taught by two certified special education teachers.

The arrival observations, which were 20 minutes in length, began outside the school building where the teachers escorted the students from the bus to their classroom. If 20 minutes had not elapsed, observers continued to collect arrival data in the classroom.

The lunch observations were conducted in the school cafeteria. All of the participants in the study ate lunch at the same time as their nonhandicapped classmates.

The vocational observations were conducted across a variety of training sites. One site was a cable company where three of the students sat together at a table. One of the students cleaned cable boxes, one stuffed cable magazines into a plastic bag, and the third student stripped cable wires.

Three other students were involved in food-service training at a hospital. They performed such duties as sorting silverware, cleaning tables, and filling baskets with condiments.

The remaining four students were placed individually in training settings. One student watered plants at a library, another student stamped envelopes at a United Way office, and one student filled soap dispensers at a chemical supply company. The student who worked at school was learning to operate a ditto machine. This task was being taught in the student's classroom.

Dependent Measures

Three dependent measures were used in the present study. The primary measure consisted of written narrative recordings made while observers recorded the social interactions of all participants. In addition to the narrative recordings, two classroom teachers were asked to rate the students on the Social Competence Rating Scale.[1] This scale was designed specifically for this study and consisted of the same types of social behaviors that were contained in the social code that was used to analyze the narrative records. Thus, a comparison could be made between teachers' perceptions of their students' social behaviors and behaviors observed upon direct observation. The instrument consisted of 46 items; each teacher rated each student on a Likert-type scale ranging from 1 (meaning the

student never displayed the behavior) to 5 (meaning the student always displayed the behavior). The rating scale was completed independently by classroom teachers, one time, over the course of the observations.

The other measure designed specifically for this study was a parent interview which consisted of 18 open-ended questions. This measure probed parents' feelings and observations about their childrens' future vocational opportunities and their social relationships with their peers.

Data Collection

Narrative recordings. All data were collected using narrative recordings. These procedures were used for several reasons: (a) to ensure that frequently occurring and important social behaviors were not missed due to an a priori behavioral code, and (b) to ensure that the behaviors were recorded within the social context where they occurred.

With these procedures, nearly all students were observed five times during each of the three different time periods or conditions: arrival at school, lunch, and during vocational training. During all conditions, students were observed for approximately 20 minutes; thus, each student was observed for a total of about 5 hours.

Observers stood approximately 4 feet from each student and described (in writing) social interactions directed to the student and social interactions the student directed to others. Each observer carried a clipboard and recorded his or her narrations on forms designed for the study. A sample of part of one of the narrative records is included below.

> The teacher says, "How are you doing?" The student does not respond. The teacher says "Did you have a nice night?" The student does not respond. The teacher says "Go to the classroom." The student follows the teacher and goes through both sets of doors. The teacher says "Did you have a nice night?" The student does not respond.

In addition to carrying a clipboard, observers also wore an earphone which was attached to a small tape recorder that signaled the observer at one-minute intervals. After each one-

minute interval, observers skipped a line on their recording form. There were 20 one-minute interval signals on each tape.

Other measures. The Social Competence Rating Scale was completed once for each student by teachers independently during the course of data collection. The parent interviews were conducted at the end of the study during a telephone conversation between the parents and either the author or an undergraduate student in special education. Each telephone interview lasted between 15 and 20 minutes.

Observers and Observer Training

Five individuals participated as observers in the study. Two of the observers were doctoral students; one was in vocational technical education, and one was in special education. Two of the observers were undergraduates in special education and enrolled in a moderate and severe handicaps teacher-certification program. The fifth observer was the author of this manuscript.

Although narrative recording procedures have been used frequently in qualitative research (e.g., ethnography, ecology), little systematic training information is available on how best to train observers to collect narrative records. Part of this difficulty occurs because quantitative procedures are rarely used to assess interobserver reliability. As LeCompte and Goetz (1982) point out, in qualitative research "agreement is sought on the description or composition of events rather than on the frequency of events" (p. 41).

Nevertheless, procedures were taken to ensure that observers were trained in as reliable a fashion as possible. First, all observers were required to read an observer-training manual that described the rules and procedures for writing narrative records. After the observers had studied the manual, they were required to score at least 95% correct on a test of the material. All observers achieved this score.

After passing the test, observers participated in training sessions in which they were shown a videotape from the classroom in which they would be observing. Observers were trained to record an uninterrupted stream of behavior with as much detail as possible about

the social interactions of a designated individual. Narratives were used to describe what the person did and said as well as information about the setting and social context. Other individuals were recorded only in relationship to the person selected for observation. Observers essentially made a chronological record of the sequence of actions in context for the targeted individual.

All observers watched the videotape and recorded interactions for five minutes and then read their narratives aloud for comparison with the author whose observation was used as the standard. Feedback was given regarding the frequency and context of the social interactions described, the objectivity of the observations, and the observer's ability to record accurately the sequence of behaviors and events throughout the observation. Once observers achieved 80% reliability on two consecutive training observations, they were allowed to collect data in the field. After data collection began, observers met weekly to participate in another training session and to raise any questions that they had.

Analysis

All handwritten narrations were dictated by the observers into tape recorders and then typed by a typing pool of secretaries. This procedure was necessary because the penmanship used by some observers was difficult to read. When the observers dictated their narrations, they added punctuation and articles (e.g., the, a) so that their narrations consisted of complete sentences. Observers dictated their observations periodically throughout the study.

In order to analyze the narrations, codes were developed and assigned to the behaviors described within the narrations. The behaviors included in the codes were based upon patterns that were emerging from the data and from behaviors that had been observed in other integrated employment settings (e.g., Chadsey-Rusch & Gonzalez, 1988). All social interactions were coded in the following manner: (a) the main initiator and receiver of the interactions were noted, (b) if the initiator was responded to, it was noted, and (c) each interaction was coded as either social/non-task related or social/task related. Initiators and

receivers of interactions could be the subjects being observed, teachers or other adults, and peers. Any interaction was coded as social/non-task if it was unrelated to either school or vocational tasks or assignments. An interaction was coded as social/task if it was related to regular instructional classwork or to a vocational task.

In addition to the above codes, interactions were also coded qualitatively for the purpose they served. There were 11 purpose codes (Table 1). Finally, if the students emitted any behavior that might be considered socially inappropriate (e.g., self-abuse) by others in the setting, the behavior was coded as being bizarre.

The narratives were coded after all of the observations were completed and typed (about one month after the end of data collection). Two of the individuals who had participated as observers were the coders (the doctoral student in vocational technical education and one of the undergraduate students in special education). Once the coders reviewed the definitions for the codes and achieved 80% reliability on three consecutive training narratives, they were allowed to code the actual data collected in the present study.

Reliability Procedures

Two types of reliability were computed—intercoder reliability and interobserver reliability. Intercoder reliability was used to measure the agreement between two persons when they assigned codes to the same narrative. Interobserver reliability was used to measure the agreement between two observers' narrative recordings when they observed the same subject at the same time.

Intercoder reliability. Intercoder reliability was calculated on 20% of the total number of observations. Random selection was used to obtain one observation from each time condition (i.e., Arrival, Lunch, and Vocational) for each student. Each reliability checker (i.e., the doctoral student in vocational technical education and the undergraduate student in special education) coded the same narrative independently of one another.

Reliability was calculated using the point-by-point agreement of occurrence method (Foster & Cone, 1986) which is a more stringent method of computing reliability than

Table 1

Purpose Codes for Narrations

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1. To Direct (D) - A verbal statement or question, motoric gesture, or both asking or demanding a person to engage or not engage in a verbal or physical behavior (e.g., "Take out a sheet of paper."//Why don't you come over to my house?//Can you hand me the wire cutters?/).

2. To Question (Q) - A verbal statement in the interrogative form directed to a person in order to obtain information or clarification. This should also include implied interrogatives (e.g., "So you had to take the bus today."). Other examples include: /"Did you go out last night?"/"Have you done your exercises yet?"/

3. To Criticize (C) - A derogatory, corrective, or punishing statement or question regarding a person's family (e.g., "Your sister sounds like a bitch."), friends (e.g., "Your friend gets into a lot of trouble?"), possessions (e.g., "Your car is in such bad shape that I would buy a new one."), appearance (e.g., "You need a hair cut."), and behavior (e.g., "Take your hands out of your pants"/Stop that noise").

4. To Praise (P) - A complimentary statement regarding a person's family (e.g., "I wish my mom was more like your mom."), friends (e.g., "You are lucky to have a boyfriend like Don."), possessions (e.g., "I like your new purse."), appearance (e.g., "Great tan."), and behavior (e.g., "You are working so fast I'm having trouble keeping up with you," or "ok," "fine," "good job," or "all right!" Note: Praise may also be in the form of a description of appropriate behavior such as "That's the way to wash your hands!" or "Good shutting the door."

5. Requests for Assistance (R) - Asking a person to help in the completion of a vocational-related task (e.g., "Help me collect the papers, O.K.?), or social-related task (e.g., "Will you help pick out some good tapes?").

6. To Offer Assistance (O) - A verbal statement used to extend help to a person in order to complete a school or vocational-related task (e.g., "Let me help cut the cable wires"), or social-related situation ("Let me help carry that stuff to class"), or a self-initiated, spontaneous, non-verbal behavior described in the narrative as "helping."

Table 1 (continued)

7. To Be Polite—Use Social Amenities (A) - To use words commonly associated with politeness or manners (e.g., thank you, please, excuse me, pardon me, you're welcome, gesundheit).

8. To Greet/To Depart (G) - To acknowledge the presence of another by waving, nodding, or saying such things as "Hi," "Good morning," "How ya doing?," "What's happening?" or to use words or gestures commonly associated when departing (e.g., waving, "Bye," "See you tomorrow.").

9. To Tease or Joke (T) - (a) Any question, comment, response, joke, gesture (e.g., imitation, pointing) or laughter which pokes fun at a person, (b) any question, comment, response, joke, gesture which is described in the narrative as "a joke" or "humorous" or, (c) any behavior that elicits laughter from one or more people.

10. To Converse/Comment/Share Information (I) - Any verbal statement (or prompt, demonstration) in past, future, or present tense regarding a task-related or social-related topic.

11. To Get Attention (H) - A word, phrase, gesture, or sound used to attract the attention of another, for example, "Hey;" "Hey, Robin;" "Tim;" "You there;" a wave, whistle, or raising one's hand.

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overall percentage of agreement. In this method, agreements of occurrence were divided by agreements of occurrence plus disagreements of occurrence and multiplied by 100. An agreement was scored when both coders placed the same code over the same sentence in the narrative. Within each single interaction or sentence, four or more codes could have been used; consequently, at least four disagreements were possible. The average intercoder reliability scores for eight observations in each condition are included in Table 2.

Interobserver reliability. As indicated above, measuring the interobserver reliability of narrative records is difficult and complex because observers differ in their choice of words, emphasis, and amount of detail provided (Schoggen, 1978). In many studies of this type, agreement is only reported between analysts or coders; quantitative measures are rarely used to report agreement between observers. In the present study, however, an attempt was made to assess quantitatively the agreement between observers. Reliability checks were randomly selected across 10% of the total observation sessions. Two trained observers watched the same student at the same time and independently completed their narrative recordings. These observations were then coded in order to compute reliability.

Reliability was once again calculated using the more stringent agreement of occurrence method where the number of occurrences were divided by the number of agreements of occurrence plus disagreements of occurrence and multiplied by 100. An agreement was scored when both observers identified the same initiators and receivers of interactions, responses to interactions, task or non-task-related interactions, and purpose of interactions. The average interobserver reliability scores based upon four observations in each condition are also included in Table 2.

## Results

The results from the students' social interactions are presented along three dimensions: (a) task versus non-task interactions, (b) direction of interactions, and (c) purpose of interactions by condition. In addition, results from the teacher ratings and parent

Table 2

Reliability Scores

| Measure | Mean Percentage of Intercoder Agreement | | | Mean Percentage of Interobserver Agreement | | |
|---|---|---|---|---|---|---|
| | Arrival | Lunch | Vocational | Arrival | Lunch | Vocational |
| Initiators of Interactions | 91 | 95 | 95 | 87 | 86 | 89 |
| Receivers of Interactions | 91 | 95 | 97 | 87 | 86 | 89 |
| Responses to Interactions | 90 | 93 | 92 | 76 | 75 | 81 |
| Task/Non-task Interactions | 74 | 85 | 93 | 87 | 86 | 89 |
| Bizarre Behavior | 73 | 91 | 70 | 82 | 100 | 85 |
| Purpose Codes | | | | | | |
| Directions | 93 | 90 | 86 | 95 | 84 | 78 |
| Questions | 88 | 98 | 85 | 81 | 80 | 79 |
| Information | 62 | 75 | 71 | 80 | 73 | 91 |
| Praise | 93 | 100 | 95 | 67 | -- | 85 |
| Teasing/Joking | 63 | 64 | 100 | -- | 100 | -- |
| Greetings | 91 | 100 | 100 | 71 | 100 | 100 |
| Criticism | 74 | 50 | 66 | 100 | 100 | 86 |

interviews are discussed. The majority of the results are presented using descriptive statistics; however, qualitative data are used to enhance quantitative measures.

Task versus Non-task Interactions

Overall, students were involved in 3,584 interactions. This high number of interactions is not surprising, because the students were observed during two conditions (arrival and lunch) where teachers were likely to be engaged in teaching and interacting with students about instructional programs. For example, during lunch teachers frequently implemented instructional programs regarding feeding or provided instructional prompts regarding mealtime behavior. The following narration is from an observation that spanned 6 minutes.

> The student (S) is eating. A teacher comes near, but there is no interaction. S continues to eat. The teacher says "Small bites, S. Chew your food up." S does not respond. S continues to eat. The teacher says, "Chew them up, S." S does not respond. S continues to eat.

All of the interactions were analyzed to determine the percentage that were task related (i.e., about school tasks or work) and non-task related (i.e., about everything else). The data indicated that students were involved in more task-related interactions (80%) than non-task-related interactions (20%). In fact, the percentage of task-related interactions was highest across all three conditions—Arrival (74%), Lunch (78%), and Vocational (87%).

Direction of Interactions

Students could interact with teachers, other adults, and peers with and without handicaps. The data were analyzed to determine the percentage of interactions involved in by all of these individuals.

The data indicated that students interacted 99% of the time with other adults (teachers) and 79% of these interactions were about school or vocational tasks. The majority of these interactions (96%) were initiated by the adults rather than by the students. In contrast, students interacted very little with their peers; only 1% of all of their interactions involved

any peers (handicapped and nonhandicapped alike). When the students did interact with their peers, most of the interactions were non-task in nature and involved greetings or offers of assistance. Although the students attended an integrated school, very few interactions occurred between them and their nonhandicapped peers—out of a total of 3,584 interactions, only 8 interactions involved nonhandicapped peers.

Purpose by Condition

Although 11 purpose codes were used to analyze the data, the majority of the interactions served the following purposes: direct, question, inform, praise, tease and joke, greet, and criticize. The mean number of interactions by condition are displayed in Figure 1.

During arrival, students were involved primarily in interactions where the purpose was to direct, question, or provide information. Again, it must be remembered that these interactions were generally initiated by the teachers and were primarily about task-related topics. An example is presented below.

> S hands the teacher his wallet. The teacher says, "Stop. You don't cross this off until you do it." Then the teacher says, "What are you supposed to do now?" S answers. The teacher says "O.K., go over there." S goes to the desk and gets the attendance sheet.

In addition to being involved in interactions where the purpose was to direct, question, or provide information, the students were also involved in an average of 10 greeting interactions.

During lunch, students were again primarily involved in interactions where the purpose was to question, direct, or provide information. These three types of interactions constituted 82% of all interactions that the students were involved in while eating lunch. An example of a common interaction used to provide information and give a direction is presented below.

> The teacher continues to set up lunch. The teacher tells S the choices for lunch. Then the teacher says, "O.K., let's start with the beans."

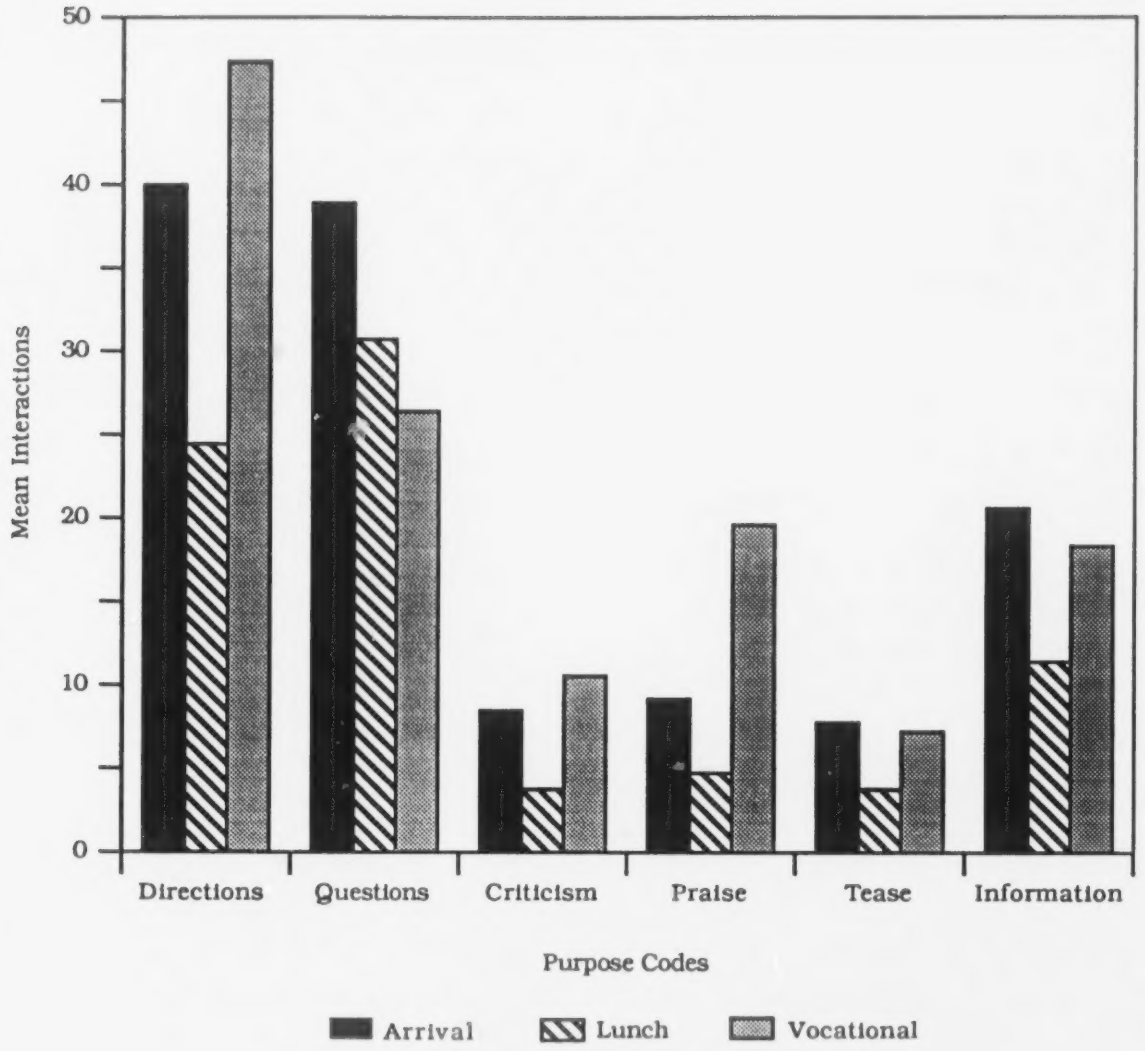


Figure 1. Purpose of Interactions Across Each Condition by Mean of Occurrence.

A similar interaction pattern occurred among the students when they were involved in vocational training; that is, the most frequently occurring interactions were directions and questions. Most of the directions and questions were instructional in nature, involved task-related topics, and were initiated by teachers. The following example, which spanned approximately 2 minutes and was taken from a student in training at a cable company is illustrative of these interactions.

> The teacher says, "Put the wires down." S looks at the teacher. The teacher says, "Stop messing around." S smiles. The teacher leaves. Another teacher says, "S, put the wires down, not up." S puts the wires down. The other teacher looks at S and S pauses. The teacher says, "S, get busy." S starts working.

After directions and questions, students were involved in interactions that involved information (M = 18.1), praise (M = 18.0), and criticism (M = 10.5). Again, these types of interactions were instructional, initiated by teachers, and related to the work being trained.

Teacher Ratings

The teachers indicated that the majority of their students seldom initiated interactions with teachers or peers. These perceptions of the teachers were corroborated by the results from the direct observations. Upon direct observation, students were observed to initiate only 4% of all of the interactions in which they were involved.

However, the teachers indicated that many of the students frequently responded to interactions initiated by the teachers. The students received an average rating of 3.6 (on a scale from 1 - 5) on responding appropriately to interactions, a rating of 3.4 on responding to greetings, 3.5 on responding to questions, 3.8 for following directions, 3.7 for helping when asked, and 4.7 for accepting physical contact. These ratings suggest that students were "sometimes" or "often" likely to respond to a variety of interactions initiated by teachers. Upon direct observation, the results indicated that students responded to teachers directions 65% of the time, responded to their questions 64% of the time, and responded to greetings 56% of the time. If we use 50% responding as a behavior that "sometimes" occurs, it

appears that teachers have a fairly accurate perception of how students are responding to their interactions.

Interestingly, teachers indicated that students seldom ($\underline{M} = 2.3$) made sounds (e.g., screaming, singing) or displayed motor behaviors (e.g., flapping hands, masturbating) that disturbed others. Upon direct observation, students were observed to emit these types of behavior a total of 372 times, or each student (on the average) emitted some type of bizarre behavior once every 2 minutes. From the observational data, it could be said that these types of behaviors were occurring more than teachers perceived they were occurring.

Parent Interviews

Telephone interviews were conducted with six parents, two guardians, and one brother of a student; one parent chose not to participate in the interview. Results of these interviews indicated that although 9 of the 10 respondents were very pleased with the school program, only 4 individuals believed that what their children were learning in school would prepare them for work. One respondent indicated that "sorting silverware would not be a real job" and another person responded that "S will not have enough skills to get a job; it is hard to see progress."

All but two individuals stated that they wanted their son/daughter to work in an integrated employment setting, and three parents mentioned jobs that they hoped their son/daughter would have when they graduated from school: working at a cable TV company, doing something clerical, and working in the computer industry. Five of the nine parents/guardians indicated that they were anxious and unsure of what was going to happen to their children after they graduated from high school.

Several questions were asked regarding the students' friends. One question probed parents'/guardians' feelings about the peers who went to school with the students. Four of the respondents were noncommittal in responding to this question, making such comments as "I haven't had much of an opportunity to interact with them" and "I don't have a good feel for them." Three respondents said the other classmates were O.K., one said

that she wished they were more age appropriate and that there were more opportunities to interact with nonhandicapped peers, and one parent indicated the peers were boring because they were handicapped.

Seven of the nine respondents answered a question about seeing classmates after school. No school classmates had ever been to the students' homes after school, and none of the students had invited any of their classmates to their home.

Seven of the nine parents/guardians indicated that their children did not have a lot of friends and that they rarely interacted with their friends. Six of the nine parents/guardians stated that they wished their son/daughter had more friends; one parent had no concerns over this issue, one parent did not respond, and one indicated that he was not sure this was a possibility.

## Discussion

In this study, the social interactions displayed by a group of secondary-aged students with severe handicaps were directly observed using narrative recording procedures. Students were observed during three social contexts—when they arrived at school, during lunch, and when they were engaged in vocational training. The results of the study were analyzed descriptively and suggest several areas that have implications for facilitating the transition from school to work.

When students were observed across all three contexts, they were involved primarily in task-related interactions, or interactions that were about school or vocational tasks. This finding is not surprising, because we would expect that most interactions in school would be instructional in nature. In employment settings, however, workers not only interact about work-related matters, but they also interact frequently about non-task matters, e.g., the weather, sports, and cars (Chadsey-Rusch & Gonzalez, 1988; Lignugaris/Kraft et al., 1988). Additionally, Chadsey-Rusch and Gonzalez found that non-task interactions occurred throughout work periods, and predominated the types of interactions displayed upon arrival to work and lunch. Because non-task interactions seem to occur frequently in

employment contexts, it makes sense that youth of transition age should have frequent opportunities to be involved in similar interactions of this type. Students of transition age should also be taught to respond appropriately to questions, information, and teasing and joking about non-task topics. These types of interactions can easily be initiated by teachers throughout the course of a student's day; that is, teachers can initiate more conversations about the weather, clothes, cars, family, and current events. Because non-task interactions, particularly those that are nondirected, may be regarded by students as more pleasant than task-related interactions, their responsiveness level may increase (Peck, 1985); additional research is needed to verify this hypothesis.

As discussed, task-related interactions were predominant throughout all observational conditions for the students. Interestingly, when one looks at the purpose of interactions across conditions, the same pattern predominates. Students were involved primarily in task-related interactions in which the purpose was to direct, question, or provide information. Although this result is not too surprising for the arrival and vocational conditions where instructional programs were frequent, it is a surprising finding for the lunch condition. Mealtimes should be social times (Morris, 1987). Unfortunately, few teachers were observed talking with the students about non-task topics; instead, most interactions involved directions, questions, and information related to feeding or lunch programs. This finding should not suggest that these types of programs should be discontinued, but it may be appropriate to establish a balance between task and non-task interactions during lunch, especially when one considers that nonhandicapped workers rarely engage in task-related interactions during lunch (Chadsey-Rusch & Gonzalez, 1988, Lignugaris/Kraft et al., 1986, 1988).

The results of this study also indicated that when students with severe handicaps were in vocational contexts, they received even more directions, praise, and criticism than when they were in arrival and lunch contexts. One implication of this finding is that students were dependent on cues and reinforcement from the environment in order to complete

their work tasks. If students are going to function as independently as possible in employment settings, they need to be less dependent on contrived or extra cues and feedback from others. In the present study, students had been on their jobs for a minimum of nine months and were judged to be in the fluency and maintenance stages of learning. As teachers prepare students for jobs, they may need to make more of a systematic effort to withdraw their instructional support so that students are working as independently as possible. This should not suggest that support be unavailable, particularly when ongoing support is a component of the supported work model, but it should suggest that teachers need to work toward enabling their students to be more independent on the job by the time they graduate from high school.

A final factor in the narrative data concerns the direction of the interactions. When these students were at school, they were involved in very few interactions with their peers, particularly nonhandicapped peers. The low rates of peer interactions may have occurred because junior high school students wouldn't typically interact with any 18-22 year olds at school, or the low rates may have occurred because the students were influenced by observer presence and did not display their "normal" rates of social interactions. However, students should have been somewhat used to an adult presence because teachers were generally in close proximity to the students with handicaps. Foster and Cone (1986) pointed out that only 34% of the behaviors observed across 19 studies that they reviewed appeared to have been affected by observer presence. It is clear that more research is needed to document the precise effects of observer reactivity.

That there were few interactions with nonhandicapped students is understandable, in part, because most of the students' instruction took place outside of school where there was little access to school peers; this point seems to warrant further discussion. Several individuals (Hanley-Maxwell, 1986; Rusch & Chadsey-Rusch, 1985; Wehman, Renzaglia, & Bates, 1985) have recommended that employment training settings should be established for students with handicaps when they are 12 or older. As students age and spend more of

their school day in employment sites, their "peers" are their co-workers, many of whom will not be the same age. Consequently, when youth are of transition age it becomes difficult to promote interactions with the chronological-age peers because there are fewer physical opportunities. Although we want to provide opportunities for interactions with school peers, we also want to make certain that youth are prepared for adult life. Perhaps more concerted efforts need to be made to involve youth of transition age in after-school activities with same-age peers (Brown et al., 1989), and efforts also should be made to increase interactions with co-workers because research has indicated that friendships can and do occur between people of different age groups (Pogrebin, 1987).

The teachers involved in this study had fairly accurate perceptions of the social skills displayed by their students. The only area where the teachers may have underestimated the frequency of occurrence was in the area of bizarre or inappropriate behavior. Efforts need to be made to reduce the frequency of inappropriate behaviors, particularly as students approach transition age. This is crucial because individuals with handicaps often lose their jobs as a result of inappropriate social behaviors (e.g., Brickey et al., 1985; Greenspan & Shoultz, 1981).

Parents and guardians were concerned that their children had few friends and would be unable to get jobs after graduation. It is possible that parents had limited information about the social contacts at school and also lacked knowledge about different employment options available. As students near graduation age, teachers need to provide parents with information about employment options and need to involve them in planning for their children's future (Seyfarth, Hill, Orelove, McMillan & Wehman, 1987; Wehman, Moon, Everson, Wood, & Barcus, 1988). Also, parents need to know that work settings are places where friendships develop (Pogrebin, 1987; Zetlin & Murtagh, 1988), but that systematic efforts will probably be needed to facilitate interactions between persons with and without handicaps (Chadsey-Rusch, 1990).

The information derived from this research can be considered as a first step in describing the social interaction patterns of transition-age students with severe handicaps, however, there are limitations to the generalizations that can be made. First, the size of the sample of students observed was small, and there is no guarantee that these students' interactions are typical of other students' interactions. Second, the teacher rating scale and parent interview questions were developed specifically for this study—there is no psychometric information available on these particular measures, so the results from the teachers and parents need to be interpreted cautiously.

Finally, few observational studies of this type have used narrative records as a method to collect data. In particular, this method makes it difficult to assess the reliability of the dependent variables, and this in combination with the complexity of the code may account for some of the variability in the interobserver and intercoder scores. For intercoder agreement, particularly with respect to the purpose codes, mean agreement scores ranged from 100% (greeting and praise) to 50% (criticism). The reliability scores for criticism may have been low because few instances of criticism occurred. Although narrative recordings capture the "richness" of behavior in context, they may also contribute to lower reliability scores because they encompass low frequency events that might not be included in a priori coding systems.

It is also possible that the reliability procedures used in this study contributed to the variability of agreement scores because the procedures, particularly interobserver, may not have been well suited to measure the "true" reliability of the data. Although different reliability procedures have been suggested by qualitative researchers (LeCompete & Goetz, 1982), no standard exists. The reliability procedures used in this investigation are typically applied to direct observational research using a priori codes. Although such procedures are uncommon in qualitative research, it seems that their application may enhance the reliability of the results of qualitative methods; further analysis of appropriate reliability procedures for qualitative methods is warranted.

In summary, this investigation found that secondary-aged students with severe handicaps were engaged in more interactions with teachers than peers about task-related rather than non-task-related interactions during arrival to school, lunch, and vocational training. Based on these interaction patterns, recommendations were made which would facilitate the transition from school to work. These recommendations included: (a) increasing interactions with nonhandicapped students and co-workers, (b) increasing the frequency of non-task interactions, (c) decreasing the frequency of directions and praise in vocational training settings, and (d) enhancing parental expectations about future employment and friendship possibilities.

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[1]A copy of this material as well as the parent interview questionnaire can be obtained by writing to the author of this article.

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